

Evaluating Sidewall Coverage In A Semiconductor Wafer

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5 ABSTRACT

A sidewall or other feature in a semiconductor wafer is evaluated by illuminating the wafer with at least one beam of electromagnetic radiation, and measuring intensity of a portion of the beam reflected by the wafer. Change in reflectance between measurements provides a measure of a property of the feature. The change may be either a decrease in reflectance or an increase in reflectance, depending on the embodiment. A single beam may be used if it is polarized in a direction substantially perpendicular to a longitudinal direction of the sidewall. A portion of the energy of the beam is absorbed by the sidewall, thereby to cause a decrease in reflectance when compared to reflectance by a flat region. Alternatively, two beams may be used, of which a first beam applies heat to the feature itself or to a region adjacent to the feature, and a second beam is used to measure an increase in reflectance caused by an elevation in temperature due to heat transfer through the feature. The elevation in temperature that is measured can be either of the feature itself, or of a region adjacent to the feature.